

Applicants pointed out that the contents of Flip-Flops D1 and D2 are referred as "the internal states" (Applicants also referred the Examiner to Fig. 7). Therefore, in Fig. 7, for example, the trellis-encoded signal has 4 internal states, or  $2^S$  (i.e.,  $S=2$ ), represented by  $S^0$  to  $S^3$ , whereby  $D1D2 = 00, 01, 10$ , and  $11$ . Using the state transition diagram of Figure 7, the trellis-encoded signal having  $2^S$  (i.e.,  $S=2$ ), internal states can be converted into a signal having 8 internal states, or the  $2^{(S+1)}$  (i.e.,  $S=2$ ) represented by  $R/Y2Y1 = -7/00, +1/10, -3/01, +5/11, -1/01, +7/11, -5/00$ , and  $+3/10$ .

Therefore, since the present specification discloses that converting the received trellis-encoded signal having  $2^S$  internal states into a signal having  $2^{(S+1)}$  internal states, and decoding the converted signal using the state transition diagram having  $2^S$  internal states, as shown in Figure 7, for example, it would be readily understood by one skilled in the art, that the above noted features are disclosed and used in Applicants' claimed invention. Therefore the informal objection that there is no support for the above noted features should be withdrawn.

#### **Claim Rejections under Section 112**

Claims 41 and 42 stand rejected under 35 U.S.C. §112, first paragraph, for failing to comply with the enablement requirement. And claims 41 and 42 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The basis for these rejections under section 112 are essentially the same as set forth above with respect to the informal grounds of objection relative to the specification. Specifically, the position of the Office Action is that the features of "the received trellis-encoded signal have  $2^S$  internal states" and "a signal having  $2^{(S+1)}$  internal states" is not found in the specification.

Again, Applicants point out that the above-noted features are clearly stated and would clearly be understood by one skilled in the art understanding the subject matter of Applicants claimed error correction method and error correction circuit. Applicants note that the above-identified feature are found throughout the specification and in particular in the portion of the specification beginning at page 37 and continuing through to page 62 and the related Figures, particularly Figure 7.

For the reasons stated above, Applicants request that the Examiner withdraw the Section 112 rejections. Applicants' position is that claims 41 and 42 are in full compliance with Section 112.

### **Claim Rejections under Section 102**

Claims 41 and 42 stand rejected under 35 U.S.C. §102(b) as being anticipated by the Hu Patent. Applicants respectively traverse this Section 102(b) rejection.

Claims 41 and 42 are independent claims.

Turning first to claim 41, it is directed to an error correction method for receiving q-bit data having convolutional-encoded bits and unencoded bits as a trellis-encoded signal and for decoding the trellis-encoded signal according to a predetermined algorithm represented by a state transition diagram, the convolutional-encoded bits being obtained by convolutional-encoder lower t bits of an input p-bit data (where  $p \geq 2$ ,  $q > p$ , and  $p > t \geq 1$ ) by a convolutional-encoder having s delay elements and the unencoded bits being upper (p-t) bits of the input p-bit data, wherein the state transition diagram has branches for respective transitions from  $2^S$  internal states at time i to  $2^S$  internal states at time (i+1), and each  $2^S$  internal states at time i has a transition to two different internal states at time i+1. The error correction method of claim 42 includes the following steps:

- **Converting the received trellis-encoded signal having  $2^S$  Internal states into a signal having  $2^{(S+1)}$  internal states; and**
- **Decoding the converted signal using the state transition diagram having  $2^S$  internal states.**

It is Applicants' position that the error correction method defined by claim 41 is patently distinguished from the Hu Patent at least based on the requirement that the received trellis-encoded signal having  $2^S$  internal states can be converted into a signal having  $2^{(S+1)}$  internal states, and that the converted signal is decoded using the state transition diagram having the  $2^S$  internal states (hereinafter generally referred to as the "Converting and Decoding Features" of Applicants' claimed invention). In other words, Converting and Decoding Features are simply not found or suggested in the Hu Patent.

The Hu Patent in general refers to an adaptive trellis decoder switching between multiple operation modes. The decoder switches between multiple modes and accommodates data type transitions using a single state transition trellis with a predetermined number of states. The system decodes trellis encoded video data encoded in different formats respectively containing different numbers of levels associated with different modes. The decoder system adaptively operates in response to a configuration signal distinguishing between the modes, and employs a state transition trellis with the same number of trellis decoding states for decoding encoded data of different formats.

In particular, the Hu Patent eludes to disclosing that regardless of whether a 4-state or 8-state trellis-encoded signal is received, the received signal is decoded using an 8-state transition diagram, and not a 4-state transition diagram as would be the case in Applicants' claimed invention. Most specifically, the Hu Patent states that "in the filter mode when transition filter 22 is used, an eight trellis decoder is required, and in the non-filtered mode when filter 22 is not used, a four state trellis decoder is required, as known. Trellis decoder system 24 (Fig. 1) advantageously incorporates a single eight state trellis architectural and seamlessly switches between modes". (Emphasis added; Applicants direct the Examiner's attention to column 5, lines 16-21 of the Hu Patent). The forgoing language from the Hu patent further supports Applicants' position of a lack of the Converting and Decoding Features of Applicants' claimed invention.

It is further disclosed by the Hu Patent that "the inventors have recognized that an eight state ACS unit may be used to mimic the four state ACS architecture required for the non-filtered mode. This is because BMC unit 30 performs parallel equivalent computations to provide replicated branch metric values to ACS unit 43 in the non-filtered mode. The disclosed ACS structure not only emulates the desired four state ACS architecture when it is provided with the input replicated values, but also enables ACS unit 43 to operate the same way in filtered and non-filtered modes. (Applicants direct the Examiner's attention to column 5, lines 38-47 of the Hu Patent). Thus from the forgoing, it is quite apparent that the Hu multi mode trellis decoder is not the same as the error correction method defined by Applicants' claim 41.

Applicants' claimed invention is able to convert a received trellis-encoded signal having 4 internal states (i.e.,  $2^S$ , where  $S=2$ ) into a signal having 8 internal

states (i.e.,  $2^{(S+1)}$ , where  $S=2$ ), and the decoding of the converted signal is implemented using the state transition diagram having 4 internal states (i.e.,  $2^S$ , where  $S=2$ ).

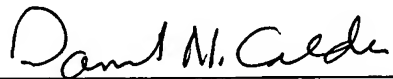
In sum, the Wu Patent does not teach that the error correction method includes the steps of converting the received trellis-encoded signal having  $2^S$  internal states into a signal having  $2^{(S+1)}$  internal states, and decoding the converted signal using the state transition diagram having  $2^S$  internal states.

In other words, the Converting and Decoding Features of Applicants' claim 41 are not found in the Hu Patent, which thereby patently distinguishes Applicants' claim 41 from the Hu Patent.

The Converting and Decoding Features are substantially also found in independent claim 42. Thus for the same reasons stated above, claim 42 is patently distinguished from the Hu Patent. Based on the foregoing, Applicants request that the Section 102(b) rejection be withdrawn.

In view of the foregoing remarks, Applicants respectfully submit that claims 41 and 42 are in condition for allowance. Reconsideration and allowance of all pending claims are respectfully requested.

Respectfully submitted,

  
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